

What is claimed is:

Sub A1

1. A environmentally degradable, highly attenuated fiber produced by melt spinning a composition comprising:
 - a. destructurized starch,
 - b. a biodegradable thermoplastic polymer having a molecular weight of less than about 500,000 g/mol; and
 - c. a plasticizer
2. The highly attenuated fiber of Claim 1 wherein the destructurized starch is present in an amount of from about 5% to about 85%.
3. The highly attenuated fiber of Claim 1 wherein the biodegradable thermoplastic polymer is present in an amount of from about 5% to about 90%.
4. The highly attenuated fiber of Claim 1 wherein the total plasticizer amount is from about 2% to about 70%.
5. The highly attenuated fiber of Claim 1 wherein more than one biodegradable thermoplastic polymer is present.
6. The highly attenuated fiber of Claim 1 wherein the biodegradable thermoplastic polymer is a homopolymer or copolymer of crystallizable polylactic acid having a melting temperature of from about 160°C to about 175°C.
7. The highly attenuated fiber of Claim 5 wherein the first biodegradable thermoplastic polymer is a homopolymer or copolymer of crystallizable polylactic acid having a melting temperature of from about 160°C to about 175°C and the second biodegradable thermoplastic polymer is another polylactic acid having lower crystallinity and melting temperature than the first polylactic acid.

8. The highly attenuated fiber of Claim 6 wherein a second biodegradable thermoplastic polymer is selected from a group consisting of diacid/diol aliphatic polyesters, aliphatic/aromatic copolyesters, and combinations thereof.
9. The highly attenuated fiber of Claim 1 wherein the fiber has a diameter of less than 200 micrometers.
10. The highly attenuated fiber of Claim 1 wherein the starch is not substituted and has a reduced molecular weight of from about 30,000 g/mol to about 500,000 g/mol.

11. The highly attenuated fiber of Claim 1 wherein the fiber is thermally bondable.

~~12. A nonwoven web comprising the highly attenuated fibers of Claim 11.~~

13. A nonwoven web wherein the highly attenuated fibers of Claim 11 are blended with other synthetic or natural fibers and bonded together.

~~14. A disposable article comprising the nonwoven web of Claim 12.~~

15. A environmentally degradable, highly attenuated fiber produced by melt spinning a composition comprising:

- a. from about 5% to about 80% of destructureized starch,
 - b. from about 15% to about 90% of a biodegradable thermoplastic polymer having a molecular weight of from about 5,000 g/mol to about 500,000 g/mol, and
 - c. from about 2% to about 70% of a plasticizer,
- wherein thermoplastic polymer microfibrils are formed within the starch matrix in the environmentally degradable, highly attenuated fiber.

16. The highly attenuated fiber of Claim 15 wherein the thermoplastic polymer microfibrils have a diameter of from about 0.01 micrometers to about 10 micrometers.

17. The highly attenuated fiber of Claim 16 wherein the diameter of the finely attenuated fiber is less than about 200 micrometers.

- 39